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Rare Plant Sleuthing: the INPS Volunteer Rare Plant Monitoring Program

By Ellen Jacquart

The sun was shining, the breeze was blowing, and the prairie grasses and sedges were dancing at this remnant prairie in Lake County. We walked around the wetland depressions, climbed over downed trees, and finally came to the spot. In early summer 2025, Matt Beatty had found prairie-parsley, *Polytaenia nuttallii*, at this prairie that he manages, and Doug Botka and I had joined him to help survey for this rare plant. Doug is the team leader on this priority rare species through the Indiana Plant Conservation Alliance [*https://indiananativeplants.org/indiana-plant-conservation-alliance/*]. I came along to test out a rare plant monitoring app that INPS and Indiana Natural Heritage Data Center (INHDC) had developed and to look for ways to improve it for use in the INPS Volunteer Rare Plant Monitoring Program – more about that later. But first we actually had to find the rare plant. We spaced ourselves out and started carefully walking the area, watching the ground closely to make sure each footstep didn't crush the very plants we were looking for.

Ellen Jacquart

Doug Botka and Matt Beatty in a remarkable prairie remnant in northwestern Indiana. They are walking carefully, while watching for the rare and elusive prairie-parsley.

After about five minutes of this, I saw a leaf at ground level that looked different. Think – a Queen Anne's lace leaf, but smaller, less hairy, and with lobing that looked more like a parsley leaf. Could it be? YES! We flagged this first prairie-parsley plant, looked at it closely to get a search image, and then slowly gridded the area, radiating out from the first plant. It was a good day, as we found 37 plants in the prairie. All the important information about this rare plant population – number of plants, were they reproductive or not, what other plant species were growing around them, were there any threats to the population, etc. – were quickly entered into the app and the report was sent directly to the INHDC, which tracks all the rare species and habitats in Indiana.

I went on about a dozen rare plant monitoring trips in the 2025 field season, and each one has special memories for me. On some, we never found the rare plant we were looking for, but we always found something that made us stop and marvel.

Rare Plants — continued on page 2

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Rare Plants — continued from front page

Why search for rare plant species?

Every native plant in Indiana fills a unique niche, and each loss of a species has a significant impact on our ecosystems. Such losses disrupt food webs and can have downstream consequences, meaning that the effect on overall biodiversity can extend beyond the loss of that single species.

Ellen Jacquart

"Paydirt!" One of the 37 living prairie-parsley plants spotted at this location. Once you obtain a "search image" they do get easier to spot.

Because 90% of insects are specialists on just one or a few species, losing even one species can threaten the insects that feed on that plant, the birds and other animals that feed on those insects, and so on. Therefore, working to conserve as many of our native plant species as possible helps reduce our biodiversity losses.

Plants can be rare in Indiana for a variety of reasons, ranging from widespread habitat degradation or loss, requiring a specific habitat that is itself uncommon, pressure from invasive species (including insects and pathogens), overharvesting, or being at the very edge of a species' natural range. For these reasons, extra steps must be taken to ensure these plants do not blink out before steps can be taken to conserve them.

Rare plant monitoring in Indiana.

There are over 400 species on the Department of Natural Resources' Endangered, Threatened, and Extirpated Plants of Indiana list, and they are spread out over 5,000 different sites in the state. Only a small fraction of these sites can be monitored by the INHDC each year, so the Indiana Native Plant Society is partnering with the INHDC, which is part of the Department of Natural Resources – Division of Fish, Wildlife and Nature Preserves, to launch the INPS Volunteer Rare Plant Monitoring Program. This program will train community science volunteers to track population changes and identify threats to Indiana's rare plant species.

The INPS Volunteer Rare Plant Monitoring program is rolling out over three years, starting with professional botanists to test the protocol and then expanding to native plant enthusiasts with no prior formal training. Together they will bridge the gap needed to better prevent vulnerable native species from disappearing from the landscape.

How to Get Involved.

- Join one of the existing rare species conservation teams with the Indiana Plant Conservation Alliance (INPCA). [*https://indiananativeplants.org/priority-species-conservation/*]
- We are currently recruiting retired botanists and skilled amateurs for the first phase of the program and within the next few months will recruit general volunteers during the second phase. Watch for the call out for volunteers and become a rare plant sleuth!
- Be a financial supporter. Program facilitation for the rare plant monitoring program is funded by grants and donations. Please consider donating to support these efforts. [*https://fs27.formsite.com/JinkhW/mmx6uipm9k/index*]

Ellen Jacquart, a member of the South Central Chapter of INPS, is a past-president of INPS.

Planned Giving: Support the Future of Indiana's Native Plants

The Indiana Native Plant Society is dedicated to protecting, educating, and advocating for the native plants that make our state unique. Our mission thrives because of the generosity and commitment of members like you, who understand the vital role native plants play in supporting biodiversity, enriching our landscapes, and sustaining healthy ecosystems for generations to come.

Planned giving is a powerful way to leave a lasting legacy while supporting a cause close to your heart. By including INPS in your estate plans, you help ensure that our work continues far into the future – preserving Indiana's natural beauty, providing educational resources, and inspiring stewardship among new generations.

There are many ways to make a planned gift, including:

- Bequests in your will or living trust
- Beneficiary designations on retirement accounts or life insurance policies
- Charitable gift annuities or trusts
- Direct gifts of appreciated securities or real estate

Making a planned gift is simple and can be tailored to your needs and wishes. Our team is happy to answer your questions and provide additional information to help you make an informed decision. For more information about planned giving, please contact us at info@indiananativeplants.org or visit the INPS website at indiananativeplants.org.

INPS at work

Ellen Jacquart

The INPS Annual Conference, held on October 24-25, not only had great speakers and field trips, but also side attractions such as this "native seed swap."

Bex Hoffer

Members of the Central Chapter (pictured here are Jonit Bookheim and Bobby Avery-Kimball) spread the word about INPS at the Keep Indianapolis Beautiful event on August 21. In addition to information about native plants, they distributed free seeds and an interactive pollinator puzzle for the youngsters.

Wendy Ford

The Annual Conference in Ft. Wayne brought 224 members from across Indiana. Among attendees were old friends such as West Central Chapter members Sue Ulrich (left) and Joan Mohr Samuels (right), and Northeast Chapter member Karen Griggs (center).

Hoosier Birthworts

By Mark Sheehan

One delight of the Indiana flora is that many species have unusual, surprising, and sometimes mysterious characteristics. Certainly this is true of three native species belonging to the birthwort family (Aristolochiaceae). One of these, wild ginger (*Asarum canadense*), is a common, clonal herb in moist woods throughout the state. The second – Virginia snakeroot (*Endodeca serpentaria*) – has a similar distribution, but the plants are usually taller and solitary. Finally, woolly dutchman's-pipe (*Isotrema tomentosa*) is a woody vine that grows in counties bordering the lower Wabash River.

In English, the family name "birthwort" suggests obstetrics, as does "Aristolochiaceae" (Greek *aristos* means "best" and *locheia* "of childbirth"). Historical obstetric and gynecological use of members of the family stemmed from their flowers' fancied resemblance to the human uterus or a human fetus. Such use accorded with an ancient Doctrine of Signatures, which guided herbal medicine for many centuries. The doctrine states that the forms of plants or plant parts are divinely offered clues to their medical uses (Pearce 2024). As medicine advanced, little evidence supported the medicinal uses predicted by the doctrine. In fact, some species in the birthwort family contain a powerful toxin: aristolochic acid (Nitzsche et al. 2013). As a result, the medical community now strongly discourages the medicinal or culinary use of birthworts (Hvistendahl 2013).

P. Rothrock

Although the flowers of wild ginger are often thought to be pollinated by small flies, recent studies suggest that these well-hidden flowers are mostly self-pollinating. The lobes of wild ginger flowers vary widely. Those pictured above are short and reflexed, while lobes on other plants are medium to greatly elongated and not reflexed. Some botanists treat the various forms as varieties, while others consider them as distinct species. Check out what flower shape you have in your woods.

Most of us who enjoy wildflowers have run across patches of wild ginger in early spring. It stays low to the ground and can blend in with the "green blur" of the forest floor, but once spotted, it stands out. It's a treat to find the plant's flowers – 1-2 inches long, usually solitary, liver-colored, three-lobed, and radially symmetrical – nestled on the ground under a pair of fuzzy, pale-green leaves. Unlike most spring ephemerals wild ginger doesn't die back when the forest canopy closes over but continues to grow provided soil moisture is sufficient. Because it grows clonally and can thrive in shady domestic landscapes, wild ginger is a good candidate as a native groundcover for deep shade.

Virginia snakeroot was so named because Native Americans and European settlers used the root as a cure for snakebite and other less-dramatic maladies. While modern medicine has identified less dangerous and more consistently effective remedies for snakebite, commercial root buyers still list Virginia snakeroot. The flowers are bilaterally symmetrical and under an inch long, often concealed in the leaf litter at the base of the plant. More useful for quick identification are the leaves, which are held up above the ground on distinctive zig-zag stems. The leaves are longer than broad, sharp-tipped, and at the base are heart-shaped. The plants persist throughout the summer.

I suspect that few INPS members have seen woolly dutchman's-pipe growing in the wild in Indiana. It's much more common in the lower Mississippi basin. In addition to a high-climbing growth habit and woolly, heart-shaped, deciduous leaves, woolly pipevine has 2 inch, bilaterally symmetrical flowers that are light-yellow with a ring of purple around the opening. They are similar in shape to those of Virginia snakeroot, but much more conspicuous. Like Virginia snakeroot, their flowers are pollinated by flies attracted to the carrion-like odor. Because of its viny character, woolly pipevine can be planted around homes to provide shade and privacy. The venerable Charles Deam (1940) tells us that: "We have had it planted for years as a porch trellis and it serves this purpose well, but it spreads vigorously by root suckers."

All three Indiana birthworts share a lepidopteran associate. Where these plants are native and abundant, caterpillars of the pipevine swallowtail butterfly (*Battus philenor*) may consume their leaves. The same aristolochic acid that makes birthwort plant parts dangerous to human health

gets incorporated into pipevine swallowtail caterpillars and makes them distasteful to birds. Adult swallowtails and their eggs, which retain the toxin in their tissues, are also avoided by predators. Other species of butterfly, such as the spicebush swallowtail (*Papilio troilus*), eastern tiger swallowtail (*Papilio glaucus*: female forma "glaucus"), and red-spotted purple (*Limenitis arthemis*), mimic the coloring of the pipevine swallowtail and, while they are not poisonous themselves, predators familiar with pipevine swallowtails tend to leave them alone (McGuire Center Staff 2022).

Another adaptation that helps the birthworts thrive is myrmecochory, ant-assisted seed dispersal. Wild ginger has made ants their allies by attaching elaiosomes – tiny packets of nutrients – to their seeds. Among species that use elaiosomes are bloodroot (*Sanguinaria canadensis*), trilliums (*Trillium* spp.), Dutchman's breeches (*Dicentra cucullaria*), trout lily (*Erythronium americanum*), and spring beauty (*Claytonia virginica*) (Candeias 2021). When ants happen across the ripe fruits of myrmecochorous species, they collect the seeds and carry them underground. The ants consume the elaiosomes and discard the seeds where they will find good conditions for germination. This is an instance of mutualism in that both of the involved parties benefit from their association.

With their distinctive leaves, mysterious flowers, and complex relationships with other species, birthworts offer Hoosier naturalists fertile ground for study and appreciation. And we have much more to learn about these mysterious species!

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Mark Sheehan, a member of the South Central Chapter of INPS, teaches a course on plants and plant communities in the Indiana University O'Neill School of Public and Environmental Affairs.

Mark Sheehan

Overall, the flowers of woolly dutchman's-pipe emit a carrion-like odor that attracts flies. How this scent profile and the ensuing insect responses change with different stages of flower development needs further study.

P. Rothrock

Virginia snakeroot produces small flowers near the base of the plant (arrow). Their pollination involves trapping insects such as small flies and fungus gnats overnight. These insects, coated with pollen, escape the next day as the entrapping hairs wither.

Baltzell-Lenhart Woods

A Generous Donation

John A. Bacone

Sometimes the Division of Nature Preserves receives unexpected surprises. Such was the case when, on January 19, 1979, Victor Baltzell of Decatur Indiana, sent an unsolicited letter to the Forestry Division, Indiana Department of Conservation, c/o The Statehouse in Indianapolis. He stated that he owned a tract of 37 acres of forest that he had been protecting for thirty-five years. He said that he was 76 years old, and that his wife Alice had passed away a year ago. Since he had no direct heirs, he was thinking of leaving the woods to the State, as a "State Forest," to be preserved for the future as a place where small game could be safe. He asked for guidance as to what he could do to make the woods a monument to his Alice.

A Pictorial History of Adams County, Indiana

What is behind a nature preserve name? It reflects the lasting legacy of a loving family, now mostly unknown to today's visitors. Pictured is the Lenhart family in 1937. Attorney Bert L. is at left with his wife Martha Ellen. Alice, who is commemorated by the gift of the Baltzell-Lenhart Woods Nature Preserve, is on the far right. No adult photo of her future husband Victor Baltzell is available. (Our thanks to Terri Gorney Lehman who assisted in gathering information about these Adams County families.)

Victor and Alice were both born in 1902 in Adams County. Victor was from a large, multigenerational farming family. Alice was from the locally prominent Lenhart family. She and Victor married in 1943, when both were reaching middle age. They did not have children, but Alice was the Adams County Deputy Treasurer for 16 years and active in church and social organizations such as the Order of the Eastern Star. Victor, in addition to farming, acted as a salesman for the National Cash Register and Montgomery Ward companies.

It took a while for Victor's letter to be forwarded to Jim Keith, the Director of the Division of Nature Preserves. While the Division of Forestry couldn't accept it to become a state forest, the Division of Nature Preserves actually had as its mission the acquisition and protection of unique tracts of land. Jim Keith wrote back to Mr. Baltzell on March 20, 1979, expressing interest and offering to meet and look at his woods. Victor immediately wrote back that he would leave the woods to the state in his will, and they set up a visit. When they met, Jim Keith was very impressed with the woods, and felt it was in nearly old-growth condition. He wrote a follow-up letter to Victor on May 29, stating that the Division of Nature Preserves would be pleased to take the woods as a gift. He pointed out that the Division had done this in the past, having accepted the donation of the Eunice Bryan Woods in Clinton County in memory of the donor's wife.

In 1980, we assured Mr. Baltzell that we could maintain a parking lot and any necessary culverts and sent a sample Nature Preserve Master Plan to him and his lawyer. Victor eventually had to move into assisted living at "Swiss Village" in Berne, and decided to make a gift of his woods, rather than leaving it to the state in his will. That is what he did. Once the donation was completed, he put in the parking lot himself, purchasing the gravel, and he got the Department of Highways to install a culvert, enabling access to the parking lot.

Terri Gorney Lehman

*Ryan Smith (on left) serves as the regional ecologist charged with managing the preserve and occasionally leading interpretive tours. Behind Ryan is one of the old trees, a magnificent white oak (*Quercus alba*).*

Terri Gorney Lehman

*A fine example of a red oak (*Quercus rubra*) protected by the Baltzell-Lenhart Woods Nature Preserve. As is often the case, this elder tree bears the scar of a lightning strike.*

Nature Preserve:

A Personal Reflection

Baltzell-Lenhart Woods was dedicated as a state nature preserve on February 18, 1992, well before Victor's death in 1997. Governor Evan Bayh, Natural Resources Commission Chair Mike Kiley, and DNR Director Pat Ralston all wrote Mr. Baltzell thank-you letters, commending him for his generous donation to the citizens of Indiana in memory of his beloved wife Alice.

The Preserve, about 3.5 miles south of Decatur, Indiana, is a high quality mesic and wet-mesic flatwoods, dominated by large specimens of burr oak (*Quercus macrocarpa*), pin oak (*Q. palustris*), swamp white oak (*Q. bicolor*), red maple (*Acer rubrum*), and sycamore (*Platanus occidentalis*). One can also spot mature hickories (*Carya* spp.), red oak (*Q. rubra*), and American hornbeam (*Carpinus caroliniana*). The woods is typical of the millions of acres of flatwoods that covered the Tipton Till Plain prior to settlement. These forests have been nearly eliminated from Indiana, and only a few small forests, such as Baltzell-Lenhart Woods Nature Preserve, remain to give us an idea of what this part of our state was not that long ago. A ¾ mile hiking trail enables visitors to view this piece of the "original Indiana."

John Bacone, retired Director of the Division of Nature Preserves, is a member of the INPS Central Chapter.

By Ryan Smith

The 37-acre Baltzell-Lenhart Nature Preserve lies just half a mile east of US Highway 27. From a distance I can tell there is something special about this woodlot. It stands above the nearby patches of forest with a full but uneven canopy – the result of some of the mature trees succumbing to old age and leaving a gap in the canopy. This is one sign that this forest has been undisturbed for a long time.

Upon entering the woods, the first thing I notice is the size of some of the oak trees and their straight branchless trunks. These cues indicate that these giants have spent their entire life growing in the shade of other trees, another sign as to the age of this forest. Next, I am struck by the absence of noise from our man-made world. Gone is the noise of vehicles whizzing down the highway nearby or the neighbor mowing the lawn. It is easy for me to imagine I have been transported back in time to a period when mature flatwood forests like this one stretched unbroken across Indiana and much of the eastern half of the United States.

As the East Central Regional Ecologist, I have the responsibility to see to the health of this nature preserve. This often takes the form of invasive species management, for example seeking out and removing non-native burning bush (*Euonymus alatus*). But even this provides me a deeper connection to this wondrous ecosystem and a satisfaction that I, in this small way, can play a part in the story these long-lived giants have to tell.

Terri Gorney Lehman

*Winter at Baltzell-Lenhart may harbor surprises beyond fine trees. Cut-leaf grape fern (*Sceptridium dissectum*) fronds remain green for much of the winter. Come spring the preserve is carpeted with woodland wildflowers.*

Ryan Smith

Even in winter, the Baltzell-Lenhart Nature Preserves invites quiet encounters with Indiana's natural heritage.

Botany 101 – Bark: Beware of Its Bite

By Paul Rothrock

Indiana is blessed with almost 400 species of woody plants ranging from *Acer* (maple) to *Zanthoxylum* (prickly ash). In learning to identify these species one looks at leaf shape and arrangement, buds and fruits, stature, and, of course, the bark. The bark of woody plants comes in a wide range of colors and textures. Colors range from white, to cinnamon, to gray, to black. Some bark is smooth and thus it grows laterally commensurate with the increase in diameter of the tree, while other bark develops fissures. The pattern of fissures may vary from large to small blocks, to elongated plates, and even a lattice work.

Aside from its usefulness in species recognition, all bark has the obvious function of protecting the growing tissues from drying out and from damage by pathogens and herbivorous animals. The thick layer of waterproof cork cells plays heavily in this role.

In the early 1990's I bought my treasured copy of "Medicinal Plants" from the Peterson Field Guide Series (authored by Steven Foster and James Duke). Leafing through the pages brought a kind of "aha moment" when it struck me that bark was more than a *physical* barrier to these pathogens and grazing animals. It is laced with a serious cocktail of chemicals. Entry after entry for woody plants listed inner bark as a reservoir of astringents, antidiarrheals, worm repellents, emetics, analgesics, and more. By my tabulation 33 genera in our Indiana flora were mentioned. I later found that our state tree, the tulip poplar (*Liriodendron tulipifera*), has over 40 different chemicals in its inner bark referred to as secondary metabolites (Rothrock 1997). These largely play defensive roles by targeting the nervous, digestive, and endocrine systems of animals. These toxins prove effective against generalist herbivores directly while causing specialist herbivores to invest their limited resources in detoxification, which slows their growth and development.

In lower doses we sometimes find these chemicals useful for their medicinal properties. Dosage of these secondary metabolites is key! In the plant world at large 20% of vascular plants produce alkaloids, including caffeine, nicotine, and morphine (Fürstenberg-Hägg et al. 2013). The roster of alkaloids exceeds 15,000 compounds. Phenolics represent another 10,000 compounds including vanillin, salicylic acid (think aspirin), and especially astringent tannins and mechanically tough lignins. But the terpenoids, with over 40,000 known structures, take the top position. Their isoprene units of 5-carbons each give rise to a multitude of resins and volatile compounds that repel, poison, and suppress feeding by herbivores. Pyrethroids are familiar insecticidal terpenoids. And then there are the bitter limonoids, some of which disrupt the molting behavior of insects (Taiz & Zeiger 2010).

If bark isn't enough of a chemical factory don't forget the toughness of their tissues and the possible presence of latex and resins that can overwhelm most grazers. Plus, these stored chemicals are but one form of plant defenses. Some defenses are active responses to physical and chemical cues in the environment.

Take a moment to study the range of bark pictured on the next page and consider the challenges that each provides would-be pathogens and grazers. Within the natural world, you probably thought of plants as passive *victims* of what nature brings their way. In reality, beware! They have become the masters of passive *aggressive* behavior. Their bark has a bite.

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Paul Rothrock is a member of the South Central Chapter of INPS but currently is living in Bellevue, Washington near his 11-year old granddaughter.

Answers:

*1 = Ohio buckeye (*Aesculus glabra*)*

*2 = sugar maple (*Acer saccharum*)*

*3 = American elm (*Ulmus americana*)*

*4 = bitternut hickory (*Carya cordiformis*)*

*5 = shagbark hickory (*Carya ovata*)*

*6 = white ash (*Fraxinus americana*)*

*7 = black walnut (*Juglans nigra*)*

*8 = tulip poplar (*Liriodendron tulipifera*)*

*9 = black oak (*Quercus velutina*)*

*10 = basswood (*Tilia americana*)*

@indiananativeplants.org

Mission

To promote the appreciation, preservation, scientific study, and use of plants native to Indiana.

To teach people about their beauty, diversity, and importance to our environment.

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Donor Relations	Lisa Canada	donors@indiananativeplants.org
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Materials Distribution	Laura Sertic	materials@indiananativeplants.org
Membership	Wendy Ford	membership@indiananativeplants.org
Website/Communications	Wendy Ford	webmaster@indiananativeplants.org

State Program Leaders

Annual Conference 2025	Sean Nolan & George Manning	conference@indiananativeplants.org
Biodiversity Grants	Molly Baughman	grants@indiananativeplants.org
Book Sale	Brooke Alford	booksale@indiananativeplants.org
Conservation Advocacy	Brenten Reust	conservation@indiananativeplants.org
Diversity	Brooke Alford	diversity@indiananativeplants.org
Florathon	Barbara Homoya	florathon@indiananativeplants.org
Grow Indiana Natives	Heidi Gray	grow@indiananativeplants.org
IN Native Seed Communities	Bill Daniels	seed@indiananativeplants.org
INPS Journal	Scott Namestnik	journal@indiananativeplants.org
Journal Editor	Paul Rothrock	journal@indiananativeplants.org
Journal Layout	Sam Ransdell	journal@indiananativeplants.org
Journal Distribution Assistant	Amanda Woods	journal@indiananativeplants.org
Invasive Plant Education	Dawn Slack & Liz Yetter	invasives@indiananativeplants.org
Landscaping with Natives	Coralie Palmer	landscape@indiananativeplants.org
Plant Sale & Auction	Aimee Cooper	auction@indiananativeplants.org
Special Project/State Flower	Tom Hohman	hohmantr@aol.com
Youth Education	Michelle Kolar & Beth Kosiba	youth@indiananativeplants.org

Chapter Leaders

Central	Greg Monzel	central@indiananativeplants.org
East Central	Jon Creek	eastcentral@indiananativeplants.org
North	Chris White	north@indiananativeplants.org
Northeast	Sean Nolan	northeast@indiananativeplants.org
South Central	Will Cowan	southcentral@indiananativeplants.org
Southwest	Misty Minar (interim)	southwest@indiananativeplants.org
West Central	George Kopcha	westcentral@indiananativeplants.org

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Share online: Send information for posting to *webmaster@indiananativeplants.org*.

Florathon 2025

By Barbara Homoya

In 2025 we held our eighth INPS Florathon. We would like to give a hearty thank you to the donors who gave so generously to support the work of INPS and to the individuals who solicited the donations.

For Florathon 2025 we had 9 teams, including 5 new(!) "florathoning" teams. The participating teams were: Turkey Trotters (Friends of Turkey Run and Shades State Parks)*, Spring Beauties (INPS Bus Tour)*, Oubache Petalers, Mayapple Mob*, Grandview Garden Club*, IDNR Division of Nature Preserves Retirees, Columbus Newcomers*, Bloomin' Stellarias, and Always Be Botanizing (* denotes new teams for 2025). Turkey Trotters and Mayapple Mob tied for "Best New Name."

The team finding the most species was Bloomin' Stellarias. The Turkey Trotters (West Central Chapter) came in second with 36 species and the DNP Retirees (Central Chapter) were third with 32 species.

INPS Florathon 2025: "By the Numbers"

Total Amount Donated	$1,776
Number of Donors	29
Most Money Raised by Team	"Always Be Botanizing" ($631) (Central Chapter)
Number of Teams	9
Number of Participants	33 (plus 27 from the bus tour)
Number of Counties Surveyed	14
Most Common Species Found	*Arisaema triphyllum* (Jack-in-the-pulpit) 11 counties
Most Species Found by a Team	72 species by Bloomin' Stellarias (South Central Chapter)

Dates for the 9th Florathon will be April 1 to May 31, 2026. Watch for inspiring Florathon team stories and for future Florathon information in upcoming issues of the *INPS Journal* (or check the INPS website). And if you haven't before (or have taken a year or more off) consider joining the fun!

Barbara Homoya, a member of the Central Chapter of INPS, enjoys botanizing with her husband, Michael; birding with her son, Wes; enjoying Ash and Elm cider with her son, Aaron, and his wife, Andrea; and "salamandering" with grandsons, Soren and Enzo.

Story Walk — *continued from back page*

Finally in March 2025, many of the plant orders began to arrive. Planting was on a tight timeline leading up to the opening of the trail. Our friends and supporters at the Indiana Native Plant Society helped install many of the plants and associated native shrubs in a Spring Planting Party.

In April 2025, Mike Homoya and Shane Gibson joined Newfields for an opening celebration on a rainy Earth Day. Mike gave a talk about the early spring ephemerals featured in the book and guided attendees on a walk (between rain showers) through the garden to look at ephemerals in person. Shane provided hands-on crafts and story time alongside Newfields' Garden and Park Education staff.

The book *Wake Up, Woods* is an inspiration, and will be shared year after year with our guests in Fairbanks Park. Plus, with the new signs, we will be able to rotate through other books throughout the year to keep the stories fresh and relevant.

For those of us working in the public sector, partnerships are critical to our work. This collaboration between the Indianapolis Public Library, Indianapolis Garden Club, Indiana Native Plant Society, and Newfields demonstrates how together we can bring a unique and exciting project to our city. We hope that this installation will engender a greater appreciation for native spring ephemeral plants, inspire a love for reading, and, of course, promote an appreciation for the outdoors.

Lisa Milton, a member of the board and the Central Chapter of INPS, is Director of Natural Resources at Newfields, Indianapolis.

Lisa Milton

Future Farmers of America members volunteered to remove Amur honeysuckle from the StoryWalk area before installation and planting in the spring of 2025.

William Bramwell Van Gorder –

By Lee Casebere

When Willam Van Gorder was born in Noble County, Indiana had been a state for only 39 years, having been granted statehood in 1816. Even after official statehood, procedures for setting up the legal means to allow settlers to buy land from the government took time to develop, including first awaiting the completion of the original land surveys. In Noble County, it was not until 1831 that the first settlers purchased land from the government, thence initiating the flood of other settlers to follow. In the early 1800's this land was essentially wilderness or in near-wilderness conditions with few human "improvements" despite having been home to thousands of Native Americans for millennia.

Lee Casebere

*Marsh blazing-star thrives in this "rich meadow" (aka fen) in northeast Indiana. Associated species include the rare false deathcamas (*Anticlea elegans*), black-eyed-Susan (*Rudbeckia hirta*), and prairie dock (*Silphium terebinthinaceum*), plus numerous graminoids.*

Our Native American predecessors did alter landscapes to accommodate their cultural lifestyles including the building of villages, cultivating crops, and performing habitat management practices to enhance hunting and food gathering opportunities. But they applied centuries worth of understanding related to native plant and animal life cycles and lived within both the bounty and limitations of the natural communities at hand. With the opening of Indiana to settlement by Western Europeans, monumental changes were about to begin since the new settlers had extremely different ideas about how to live on the land.

Noble County was and still is extremely diverse in topography, geology, hydrology and in plant and animal resources. Into this rich country in 1853, Aaron and Rebecca Van Gorder moved to a 280-acre farm in Allen Township near the Dekalb County line a short distance east of the village of Avilla. There they raised three sons and a daughter with son William being born in 1855. We learned in Part 1 of this story that William had serious interests in botany, birds, and geology, but it's not known how early in his life those interests began to take shape. According to a short personal biography of William in a bi-county history book (Counties of LaGrange & Noble, Indiana 1882), he attended Fort Wayne College where he graduated at the head of his class in 1881 at age 26. It was said that he excelled especially in civil engineering in college, although no mention was made of any natural history interests. During his college days, "He taught several terms of school while attending college, thus acquiring a thoroughly practical as well as theoretical education."

William's botanical interests must have blossomed during his college years since he published his Catalogue of the Flora of Noble County, Indiana (Van Gorder 1885) at the age of 30, and in the preface of the flora he states that, "it is the result of three season's work, performed as time and opportunity would permit." He added that, "I desire to express my thanks to Prof. Charles L. Clippinger, A.M., of Fort Wayne College, my former and earnest instructor whose efforts in this science are remembered and appreciated by his pupil. I am under many obligations to Prof. Charles R. Barnes, A.M., of Purdue University for his kindness in identifying new species, and especially for determining the Rushes (Juncaceae) and most of the plants of the Sedge family, thus adding very much to the worth of the catalogue." At the time his flora was published, William was principal of the Rome City School, and the remainder of his work career would be in the field of school administration, thus indicating that his interests and contributions in various fields of natural history were avocational.

Van Gorder's 1885 flora was self-published and was probably quite limited in distribution given that its availability was not likely widely known or advertised, and botany was probably not of great interest to the public at large in those days. Its second printing in the Annual Report of the Indiana Geological Survey (Van Gorder 1894) surely had a much wider

An Early Indiana Botanist (Part 2)

distribution since this was in an official state report with larger audiences having geological and botanical business interests as well as general scientific and natural history interests. As for content, the second printing didn't add much new material. The first edition included 693 species, 348 genera, and 98 orders of plants; the second edition included 724 species, 363 genera, and 99 orders. Although this is speculation, my guess is that the limited number of additions was likely due to William having much less time available for both field time and plant identifications due to more pressing school administration duties.

During Van Gorder's younger years Indiana's flora was not well-known, so there was much to learn. Few county or regional floras existed in Indiana — much of what was being reported was "base level" information. This was also at a time when plant identification books were scarce and relied heavily on dichotomous keys for identification. When county or regional floras or plant lists did become available, they were often simply lists of species without any references to details such as habitat, what species associated with one another, abundance in the area, and time of flowering.

Van Gorder's floras were a breath of fresh air in this regard since nearly every species had at least *some* added, relevant information. This feature of his floras even caught the attention of W.W. Chipman (Chipman 1896) who said that, ". . . Mr. Van Gorder's reference to scarcity or abundance, and to locality by townships, is very helpful. It would seem that much more importance should be placed on these annotations than is often done. The helpfulness of richly annotated lists is double that of those with bare names of species." Unfortunately, even though Van Gorder provided more and better information than most other botanists of his day, he would rarely note everything that we expect today, thus what he provided frequently leaves one wishing for more. He did at times mention a lake by name or give the township name and section number where he found a particular plant; but this was the exception, not the rule.

A significant drawback to Van Gorder's floras is that neither edition had a comprehensive index. The index in the first edition covered only trees, shrubs, and woody vines. His second flora had no index at all. Another challenge in reviewing his floras today is that many scientific names are different now than they were in the late 1800's.

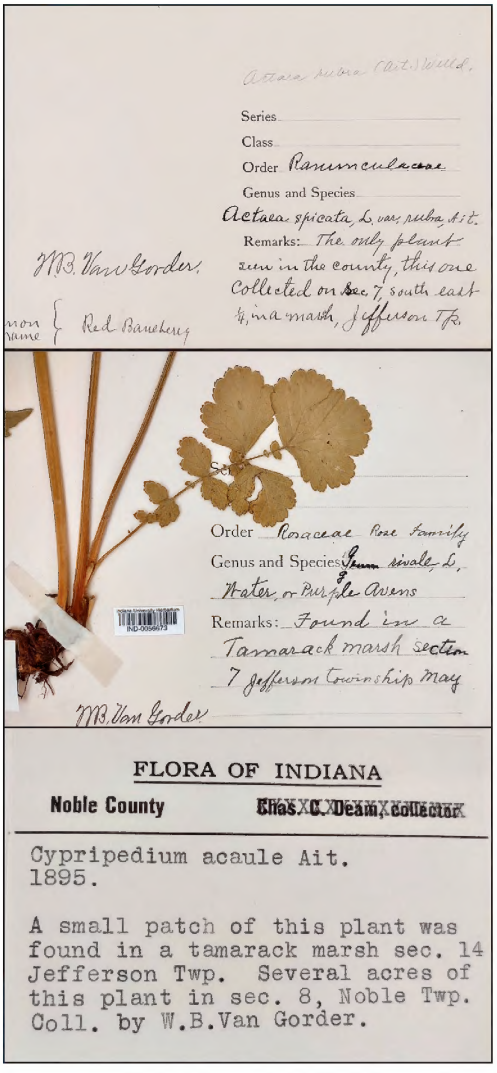
Despite these limitations, there is much we learn about native plants and their habitats by sifting through the details in Van Gorder's floras. One detail that I noticed early in my study of his work is that there were numerous wetland species which he said grew "in the low rich meadows," especially in Sparta, York, or Orange townships. Use of the word "rich" was purposeful on his part, imparting a special connotation meant to be noticed. Other times he would mention wetland species being "on the low grounds along the Elkhart River." Almost without exception the species he mentioned growing in the rich meadows or on the low grounds along the Elkhart River are fen species. For decades, botanists were not quite sure what to call fens, and Van Gorder was no exception to this dilemma. Botanically speaking, the flora of fens has much in common with bogs, but much in common with prairies and sedge marshes, also.

Van Gorder realized that these rich meadows and low grounds were important places, so he made a special effort to point out the many interesting species growing there. In so doing, it helped me realize that some genuinely large and diverse fen communities existed in Noble County during the late 1800's. But sadly, despite the reference to rich meadows and the low grounds along the Elkhart River, and even specifically mentioning townships by name, he did not specify the section numbers where these fens were located. Why not, I wonder? Were there too many to list? Were such places so ubiquitous and so large that it seemed unnecessary to elaborate further regarding locations? Did he think they would always be a part of the Noble County landscape, not knowing that many would be drained or earmarked for drainage during his own lifetime?

To give you a sense of the special plants that grew in these meadows, here are some Van Gorder identified (I am using current-day common and scientific names, not names from the 1890's): shooting-star (*Primula meadia*), Indian paintbrush (*Castilleja coccinea*), rose pogonia (*Pogonia*

Van Gorder — continued on next page

Van Gorder — continued from page 13


Series
Class
Order Ranunculaceae
Genus and Species
Actaea spicata L. var rubra Ait.
Remarks: The only plant seen in the county, this one collected on Sec 7, south east 4, in a marsh, Jefferson Tp.
W.B. Van Gorder
Common name { Red Baneberry
Order Rosaceae Rose Family
Genus and Species Geum rivale L. Water, or Purple Avens
Remarks: Found in a Tamarack marsh section 7 Jefferson township May
W.B. Van Gorder
FLORA OF INDIANA
Noble County
Chas. C. Deam, collector
Cypripedium acaule Ait.
1895.
A small patch of this plant was found in a tamarack marsh sec. 14 Jefferson Twp. Several acres of this plant in sec. 8, Noble Twp. Coll. by W.B.Van Gorder.

Lee Casebere

Two of these herbarium labels are in Van Gorder's own handwriting, the third was a replacement label created for Charles Deam's herbarium. Note the tantalizing details, unusual for the day, that Van Gorder provides for these rare species.

ophioglossoides), grass-pink (*Calopogon tuberosus*), shrubby cinquefoil (*Dasiphora fruticosa*), grass-of-parnassus (*Parnassia glauca*), marsh blazing-star (*Liatris spicata*), Riddell's goldenrod (*Oligoneuron riddellii*), bog lobelia (*Lobelia kalmia*), lesser fringed-gentian (*Gentianopsis virgata*), false asphodel (*Triantha glutinosa*), yellow star-grass (*Hypoxis hirsuta*), and purple false foxglove (*Agalinis purpurea*). Some of these plants he described as being "very common" or "plentiful." One plant that raised my eyebrows is prairie lily (*Lilium philadelphicum*), one of my favorite prairie plants. This is a plant for which Charles Deam (Deam 1940) had few records, even from northwestern Indiana where it was more within its range. It is quite rare in Indiana today despite not being quite rare enough to be on the state threatened and endangered list. Although Deam had a few historical records of it from northeastern Indiana, I know of only one site for it in that part of the state today. In Noble County, Van Gorder said of it, "Very plentiful in York and Sparta townships." That's particularly difficult for me to imagine, but certainly a display I would have loved to have seen!

Despite wonderful surprises in Van Gorder's floras such as learning about the "rich meadows," there are some puzzling aspects that relate to potential misidentifications and to some species that are missing entirely. One example pertains to three fen species in the parsley family (Apiaceae). His floras mention *Conioselinum canadense* (now *C. chinense*), a rare species that is listed as state endangered today. Its rarity would put much importance on correct identification but no Van Gorder specimens of it are known to exist, and some parsley family species are troublesome to identify. Surprisingly, his floras do not list two other plants in the parsley family that are common fen species, those being golden Alexanders (*Zizia aurea*) and cowbane (*Oxypolis rigidior*).

As already described, written records, such as those of Van Gorder, provide important clues into the past. These documents become even more useful when supported by physical specimens, and Van Gorder did collect plant specimens. Although his collection was modest in size, it includes significant species that, given their rarity, provide truly important confirmation.

Here is what we know and don't know about Van Gorder's specimens. There is a section at the back of Deam's flora that lists Indiana plant collectors and their collections. It indicates that Van Gorder had 254 specimens, some of which were with Deam himself and the majority at Purdue University. It is not known how Deam ended up with Van Gorder's plant specimens. Did Van Gorder himself give them to Deam before he died (in 1927 at age 72), or did Van Gorder's daughter give them to Deam after her father died just as she had given Sidney Esten her father's bird notes? And how did Purdue get much of Van Gorder's plant collection? Perhaps Deam had received all of Van Gorder's specimens but only retained a subset. What we know for sure is that Deam's herbarium, now at Indiana University, includes 40+ specimens of Van Gorder's. We also know that a larger number of Van Gorder's specimens are at Purdue, but their collections are not entirely in a searchable database. Purdue does have at least 128 Van Gorder specimens in a database, but they have even more of his specimens. Of Van Gorder's original 254 specimens, based on the 128 accounted for at Purdue and the 40 or so in the Deam Herbarium at Indiana University, Purdue may have about 80 unaccounted for specimens.

There are fascinating insights that we learn from Van Gorder's plant collection. We know that his second Noble County flora was published in 1894, and that in the fall of 1895, William and his family left Noble County to be superintendent of schools in other regions of Indiana. Before

leaving, he added several rare plants to his collection including some species he had never seen in the county before, and thus, were not included in his 1894 flora. These included three species of orchids: whorled pogonia (*Isotria verticillata*), orange fringed orchid (*Platanthera ciliaris*), and green adder's-mouth (*Malaxis unifolia*). In addition, he found pink lady's-slipper (*Cypripedium acaule*) in Noble County for the first time in 1895. He had, however, included this species in both editions of his floras based on an 1881 report in *Botanical Gazette* from "a tamarack swamp in Noble County." Van Gorder discovered two locations for this species in 1895. One of his sightings is flat-out mind-boggling by today's standards since the plant is now listed as state endangered and is seemingly becoming rarer in Indiana by the minute. Specifically, one of his herbarium labels includes the note that there were "several acres of this plant"! This was in a tamarack bog that included not only pink lady's-slipper but also orange-fringed orchid and whorled pogonia! Not surprisingly, this bog has been altered by drainage, and although the site still harbored a few boreal species in the 1980's, the habitat was highly degraded with a ditch running right through the heart of it.

There is no question that thousands of acres of wetlands of all kinds have been destroyed or severely degraded in Noble County since Van Gorder's time. But natural communities of all types, wet and dry, have suffered greatly since that initial mad rush of settlement 190 years ago and from continuing rough treatment in the decades since. It seems reasonable to question how severely we have degraded the floristic quality of even our mesic upland forests since Van Gorder's time. Van Gorder collected round-leaf orchid (*Platanthera orbiculata*; state extirpated), pipsissewa (*Chimaphila umbellata*; state endangered), and three-birds orchid (*Triphora trianthophora*; rare) in his father's woods! Although this is quite mind-boggling to conceive of in today's world, his voucher specimens validate these reports. It does make one wonder if his father's woodland was in fact that much "better" than hundreds of other woodlands in northeastern Indiana, or were most Indiana woodlands at that time simply richer in conservative plant species.

Van Gorder's work depicts a landscape much richer in natural communities and floristic quality than that of the present day. As I reflect upon his botanical accomplishments and try to visualize the rich meadows he documented that are now gone forever, my mind aches at the breadth of the loss. When imagining prairie lilies in "very plentiful" numbers in some of those meadows I feel cheated that I can never see what he saw and be able to wander through them in dumbfounded delight. Let us not forget that Noble County is just one of ninety-two Indiana counties that experienced similarly ruthlessly destructive settlement experiences, and that Van Gorder himself lived to see the destruction of many woods and wetlands that he had surely held close to his heart. The famous author and cultural critic Wendell Berry (1971) poignantly mourns the loss: "The pristine America that the first white man saw is a lost continent, sunk like Atlantis in the sea. The thought of what was here once and is gone forever will not leave me as long as I live. It is as though I walk knee-deep in its absence."

Lee Casebere

Prairie lily has few historical records from northeast Indiana, but was plentiful in several areas of Noble County known to Van Gorder

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Lee Casebere, a member of the Central Chapter of INPS, is a naturalist, ecologist, nature photographer, and retired assistant director of IDNR's Division of Nature Preserves.

Indiana Native Plant Society
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StoryWalk at Newfields

Above: Members of INPS volunteered to plant spring ephemerals around Wake Up, Woods *StoryWalk signage during the Spring Planting Party.*

*Below: The StoryWalk at The Virginia B. Fairbanks Art & Nature Park, Newfields: mayapple (*Podophyllum peltatum*) was planted around the associated page from* Wake Up, Woods.

By Lisa Milton

In the spring of 2025, Newfields opened its first permanent StoryWalk, a trail lined with the pages of a storybook, in The Virginia B. Fairbanks Art & Nature Park. The project encourages early childhood literacy, family connection, and an appreciation of the outdoors for some of Newfields youngest guests.

Now, each spring, the StoryWalk will feature the beautifully written and illustrated children's book, *Wake Up, Woods*, by author Michael Homoya, poet Shane Gibson, and illustrator Gillian Harris. The book, published in 2019 with support from the Indiana Native Plant Society, showcases native spring ephemerals accompanied by poems and beautiful illustrations.

The development of this StoryWalk required partnerships and teamwork. The project began in 2022, when a librarian with the Indianapolis Public Library approached me with the idea of adding a StoryWalk at Newfields. I loved the idea and knew Fairbanks Park was the perfect location. Like everything in Fairbanks Park, it would be free and open from dawn to dusk, every day of the year.

The first iteration of the StoryWalk consisted of temporary signage, but following its early success, The Indianapolis Public Library sought and received a grant for more permanent infrastructure. In turn, we worked closely with the library to design and install signs that were aesthetically compatible with those already in the park. We decided that the permanent location would be a wooded area around the Ruth Lilly Visitor Pavilion, just north of The Wild Birds Unlimited Native Pollinator Meadow.

The permanent infrastructure allows for an intentional educational program and seamlessly aligns with Newfields' mission to provide exceptional experiences with art and nature. *Wake Up, Woods* was an easy selection for a featured book; and soon the idea came about to plant each species featured in the book around its associated sign.

In order to make real-life plantings of species found in the pages of the book, we sought support from additional partners and organizations with complementary missions and goals. This started with a generous grant from the Indianapolis Garden Club that allowed us to purchase native spring ephemerals and tools.

Before we could start planting, though, a significant number of invasive species needed to be removed, including Amur honeysuckle (*Lonicera maackii*) and blankets of purple wintercreeper (*Euonymus fortunei*) and lesser celandine (*Ficaria verna*). This was done throughout the fall of 2024 and the winter of 2025 with help from Future Farmers of America, Master Gardeners, AmeriCorps, and other volunteers.

StoryWalk — continued on page 11